

## MULTI-SEGMENT CONTAINER

Cross-reference to related Applications – NOT APPLICABLE

Statement Regarding Federally Sponsored Research or Development – Not Applicable

Reference to Microfiche Appendix – Not Applicable

### BACKGROUND OF THE INVENTION

1. This invention is directed to a multi-segment container, and in particular to a multi-segment molded plastic container having a plurality of identical, detachable segments.

2. A widespread variety of containers exist, having a large number of uses.

Many of these containers are molded in plastic, frequently incorporating a flexible hinge portion joining two similar half-portions in folding relation, and having male fastener portions on one half of the container protruding below the plane of the joint, which engage female fastener recesses of the opposed other half of the container, to secure the container in a closed condition.

These containers are molded “in the flat”, usually by vacuum molding from sheet stock. They are difficult to open, on account of the tight engagement of the fastener halves with each other.

Also, the required mold is asymmetrical, on account of the nature of the fasteners, thus requiring the use of a large vacuum press or injection mold.

This type of container, in clear plastic, is frequently used for containing perishable commestibles.

Many other types and configurations of plastic container exist for containing various specialty products, such as a vast variety of types of CD disc containers.

### BRIEF SUMMARY OF THE INVENTION

The present invention provides a multi-segment container having a plurality of substantially identical segments in mutually hinged array to form an enclosure, wherein peripheral surface portions of the segments collectively comprise a peripheral wall of the container, and adjoining sidewall portions of the segments collectively form a pair of container end walls in mutually spaced relation, each of the segments including hinge means for detachable engagement with an adjoining segment.

Each of the segment sidewall portions includes a pair of flexible tab portions located on opposite ends of the sidewall, and the two tab portions of each segment side include a male and a female hinge portion. It is usual for the male hinge portions of opposite side portions of a segment to be in mutual inwardly facing relation, to facilitate assembly of a pair of container segments together in forming a container.

In a preferred embodiment, the male hinge portion consists of a substantially hemispherical protruberance, and the female hinge portion consists of a recess to receive the hemispherical protruberance in at least partially entered relation therein.

The female hinge recess is generally a circular hole through the wall thickness of the tab.

One container embodiment consists of three substantially identical segments, which combine to form a substantially cylindrical container, having respective hinge tab portions in mutually overlapping relation to thereby align the male and female hinge portions in mutually engaging relation, wherein the lateral spacing of the hinge tabs permits the tabs of one container segment to receive and overlap the hinge tabs of the adjoining segment.

The surfaces of the segment side portions may have raised area portions thereof serving as abutments against which an adjoined segment can rest, when in an open condition.

The form of the hinges as a combination of raised detent and aperture has the advantages of ready assembly and disassembly, combined with the capability of rearranging the respective segments of a container to form an open display.

The edges of the segment side portions may be flat, or may have a flat segment, which can serve to stabilize the container against rolling or toppling, either when in a closed condition, or when differently configured into a display mode.

The form of the segments permits a large number to be joined as a continuous “train” of open-topped containers. Their flexible jointure permits their arrangement over a variegated, non-planar terrain

In one embodiment, the containers may be rearranged in their mode of mutual connection to form a pedestal style of open segments, for a static display.

The interior peripheral surfaces of the segments of one form of container are corrugated, as a form of separation means, in a series of grooves , which may be sized to receive CD discs or other preferred forms of disc in entered, supported relation within the grooves.

The alternative use of ribs or notches is also contemplated.

This type of embodiment can be used collectively as a container for the selected type of disc, or it can be displayed in an open condition, to showpiece the disc contents. The open condition may include re-arrangement of the segments to form a pedestal style display.

The subject container may be made by way of a variety of materials and processes. Press-molding in polypropylene is one considered option.

#### BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

Certain embodiments of the invention are described by way of illustration, without

limitation thereto other than as set forth in the accompanying claims, reference being made to the accompanying drawings, wherein:

Figure 1 is a perspective view of a single segment of a first embodiment of a casing in accordance with the present invention;

Figure 2 is a view similar to Figure 1, of a second, grooved embodiment of a subject casing;

Figure 3 is a side elevation of the Figure 1 and Figure 2 embodiments;

Figure 4 is a side elevation of a closed container embodiment having three segments;

Figure 5 is a perspective view of the Figure 4 embodiment;

Figure 6 is a perspective view of the Figure 5 embodiment in a partially open condition;

Figure 7 is a schematic view of a static, pedestal display arrangement of segments;

Figure 8 is a side elevation of a train of elements;

Figure 9 is a front end view of the Figure 2 embodiment, and

Figure 10 is a rear end view of the Figure 2 embodiment.

#### DETAILED DESCRIPTION OF THE INVENTION

Referring to Figures 1, 2 and 4, a container 20 has three substantially identical container segment portions 22 in mutually hinged relation at 23 to form an enclosure. A peripheral wall portion 24 of the segments collectively comprise a peripheral wall 25 of the container 20.

Adjoining side portions 28 of the segments 22 collectively form a pair of end walls 30 in mutually spaced relation, each said segment side portion 28 including hinge means 23 forming detachable engagement with an adjoining segment. The hinge means 23 consist of male detent members 36 and (female) recesses 38, respectively located on flexible tab

portions 40 located outside the container enclosure.

In the Figure 1 embodiment, the peripheral wall portion 24 is one third of a cylinder, and terminates flush with the edges of the side wall portions 28, such that, in the closed condition shown in Figure 3, the cylindrical peripheral enclosure wall 25 is virtually continuous.

Referring to Figure 2, the peripheral wall portion 24 is corrugated, forming a series of grooves 44, which may be laterally sized to receive CD discs or other forms of inserted items.

Referring also to Figures 5, 9 and 10, the side wall portions 28 include raised flange portions 46, the edges of which form abutments to control the closure (see Figure 6) and limit the reverse folding of the segments when in an open condition, such as is shown in Figure 7.

It will be seen in these illustrated embodiment that the segment tab ends containing the hinge apertures 38 are more widely spaced than the other tab ends that carry the male detents 36.

It is contemplated that planar ends of uniform thickness may be provided, wherein the side wall portions 28 are parallel, with greater reliance being placed on the flexibility of the tab end portions 40.

Referring to Figure 8, while only three container segments 22 are shown, it will be understood that there is no practical limit to the length of such a train that can be created. Such an elongated train could contain compact discs (CD's) as a display across a store window and the like.

Referring to Figure 5, in this embodiment a medallion 50 is shown. A replaceable mold

insert can be used to form this decoration, enabling rapid adaptation of a mold for different promotional containers.

Figures 4, 7 and 8 more clearly show a heel projection 52 along the edge of the sidewalls 28 of the segments 22. The heel projections 52 serve to steady the container 20 against free rolling, and may be positioned adjacent the medallions 50.

It is contemplated that the containers 20 may be fabricated from sheet metal.

It is further contemplated that different multiples of segments 22 may be combined into different forms of structure.

A further contemplation is the provision of multiple hinge recesses 38 in mutually adjacent relation, such that with one set of recesses as presently illustrated the container peripheral wall 50 is substantially continuous, whereas by engaging the male member 36 into another hinge recess 38, ventilation apertures are left in the peripheral wall 50.

Alternatively, a single hinge recess 38 may be located a predetermined distance from the male detent member 36 such that when assembled to a like, adjacent segment 22, a predetermined space between the adjacent container surfaces is created, for ventilation.

In such an instance, the end wall 30 would also have ventilation apertures in its surface.

Thus, in the case of a specialized, ventilated container, this effect may be achieved by off-setting the male hinge member 36 or the female (aperture) 38 an appropriate amount.